



What Scientists' Failures Teach Students

Showing the failures behind success can change how students see science.

Excellent Educator, 3(17), 1, 2026

Research in Brief

Researchers studied 402 students in Grades 9 and 10 who read stories about eminent scientists. Some students read about scientists' intellectual struggles and mistakes, others about their personal struggles, while a control group read mainly about the scientists' achievements. Students who read either type of struggle story performed better in science than students who read achievement-only stories. The benefit was particularly strong among lower-performing students. Students who read struggle stories also felt more connected to the scientists. Interestingly, the intervention did not significantly change students' general beliefs about intelligence, effort or failure. The effect seems to have come less from changing a stated belief and more from giving students a different, more relatable picture of what scientific success looks like.

The researchers suggest that stories revealing scientists' failures and vulnerability can help students interpret their own difficulties as a normal part of learning rather than evidence that they lack scientific ability.

✓ Try Tomorrow

- When introducing a famous scientist, include one important failure or setback, not just the final discovery.
- Ask: "What did this person have to struggle through before succeeding?"
- When students make mistakes, connect them to the idea that productive learning often involves unsuccessful attempts.
- Use struggle stories especially when introducing difficult science topics.

★ One Key Takeaway

Don't show students only how successful people succeeded. Show them what they struggled through.

Keywords

Student motivation, science learning, struggle, failure, achievement, growth mindset, scientist stories, academic performance

Original Research

Lin-Siegler, X., Ahn, J. N., Chen, J., Fang, F.-F. A., & Luna-Lucero, M. *Even Einstein Struggled: Effects of Learning About Great Scientists' Struggles on High School Students' Motivation to Learn Science*. Journal of Educational Psychology.